

FEVER IN AGRICULTURAL DISTRICTS;

BEING A

REPORT

ON

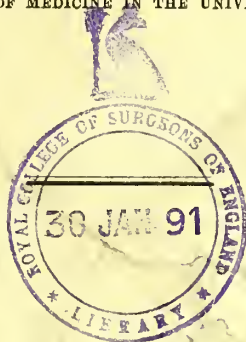
CASES OF FEVER

OCCURRING IN THE PARISH OF GREAT HORWOOD,
IN THE COUNTY OF BUCKINGHAM.

BY

HENRY W. ACLAND, M.D., F.R.S.,


REGIUS PROFESSOR OF MEDICINE IN THE UNIVERSITY OF OXFORD.



OXFORD AND LONDON:

JOHN HENRY AND JAMES PARKER.

1858.



Digitized by the Internet Archive
in 2015

<https://archive.org/details/b22278722>

Oxford, July 10, 1858.

SIR,

1. By request of Mr. Willis, Clerk to the Winslow Board of Guardians, I have inspected the parish of Great Horwood, in company with the Union medical officer, Mr. Wynter.

2. The purpose of my visit was to gather the particulars of a Fever which has been Endemic in the parish since Michaelmas, 1857. Accordingly, my attention has been especially directed, 1stly, to the Nature, 2ndly, the Cause, 3rdly, the Treatment, and 4thly, to the Mode of Prevention of the disease.

3. In reporting to you the conclusions at which I have arrived, I take leave to do so at the greater length, because the danger is not only considerable, but deeply rooted in this district; and because, did I answer you briefly, it might be supposed that I thought lightly of the case, because the mortality is numerically small. How grave the evil is may best be appreciated by a comparison, even if in some respects it be inapt. An Endemic affecting a similar proportion of the population of London would attack, in nine months, more than a quarter of a million of persons of all ages, above fifty thousand would die of the fever alone, while the deaths during the period from other causes would not be diminished. Further, you will perceive that the remarks which will be made on the population and its circumstances are applicable to many districts in this and other counties; and that the instance of Great Horwood is therefore instructive to many as an example of

the risk in which some people live, who are apparently leading healthy out-of-door lives.

4. The number of cases which have occurred in the parish up to the present date, July 9, whether under the care of the Union officer, Mr. Wynter, or under that of Mr. Newham of Winslow, are 125^a. The deaths have been eighteen. The population was computed in 1851 at 704^b: therefore out of every six persons one has already fallen ill: and of those who have had it one of every seven has died. Not only the numbers of cases of disease from this cause alone, but its hitherto unabated character, and the simultaneous high rate of mortality from other causes, constitute the ground for anxiety.

To you, who have instituted this inquiry, I need not comment on the loss of time, inconvenience, suffering, distress, depression, and anxiety which such a visitation entails on a whole population.

Description of the District.

5. The part of the parish of Great Horwood in which the village is situate, occupies a ridge of the Oolite which runs down from Whaddon Chase in a westerly direction, is bounded on either side by a moderate valley, and terminates by a gentle fall a mile to the south-west of the township.

In each valley a small rivulet runs, generally from east to west; the two rivulets unite at the base of the slope just named, and the joint stream enters the Ouse between Padbury and Buckingham.

There is, therefore, a natural fall to the North, the

^a In this estimate Mr. Wynter does not include mild cases, which might be termed *Febricula*.

^b Singleborough is excluded: there is at present one case in that distant hamlet, whose population was 130 in 1851.

South, and the West. The parish is pleasantly but not excessively wooded, grows splendid corn, and has meadows of rich pasture on undulating slopes.

6. The population is wholly agricultural : the males are generally well employed in field-work. Some females earn, by close industry, from 2d. to 5d. a-day at lace-making. Time was, when a girl of sixteen could obtain from this work 16s. weekly. Rent is paid by the labourers from 9d. to 1s. 6d. weekly. Most of the cottages have some sort of garden. A pig is generally kept. Many are the possessors of a small copyhold property, by which they can barely live ; while all the poorer parishioners have allotments on an enclosed common, a mile along a good road from the mass of their dwellings.

There is no large resident landed proprietor. The parish has, within the last few years, greatly improved. Industry and neatness are the rule in the parish rather than the exception ; and although, as will be presently seen, there is yet much to be done in reconstructing on a better plan the poorer class of tenements, yet steady progress has been making for some time past by the whole population.

Such is the district and such the people in question. The relation of these facts and circumstances to the prevailing disease will soon appear.

General Character of Fevers.

7. As this paper may fall into the hands of some who are but imperfectly acquainted with the general laws of Fevers, it may be proper to state them in a simple and untechnical manner.

Several of the early symptoms of Fever are common to many disorders ; such as disorders of digestion, inju-

ries, &c. But FEVERS, specially so called, as distinguished from "being feverish," imply some causes, or cause, independent of the person affected.

These causes are now known to be for the most part Destitution, Mental depression, Putrescent organic remains, Over-crowding, Deficient ventilation, Contagion. These appear to act with the more intensity, in proportion as they combine together.

Of FEVER there are probably three varieties. Their mortality, causes, and communicability by contagion vary. There is also great difference in different individuals in their susceptibility to the infection, and in the duration of the disease; in the way in which it lays hold of, and in the mode by which it destroys their vital powers; and so also, and necessarily, a great difference in the way in which persons are to be treated.

This difference is caused, not only by the nature of the Fever itself, and, probably, by general laws regulating the course of all disease, from generation to generation, but by the constitution of the person, by his past mode of life, by his present habits of mind and of body, and by the circumstances of his dwelling. Death may be caused rapidly by, as it were, the primary shock to the whole constitution; or more slowly, by either, gradual "wear and tear" or chemical destruction, which cannot be resisted, or, by the establishment of particular injuries in some vital organ, or organs.

8. Recovery may be brought about at various periods from the moment when the poison is received, either by the spontaneous cessation of the chemical changes; or by supplying by art the great waste of the body; by maintaining the general powers of the circulation and of the nervous system; by aiding the repair of injury to organs; by hindering and preventing that injury; and

by placing the sick in the circumstances most favourable for promoting these remedial processes.

Therefore, the duty of the Physician, wherever Fever is prevalent, is, above all, and first of all, if possible to ascertain what originated the disease; 2ndly, by what means it was propagated; 3rdly, in what way to remove the cause, and check the propagation; 4thly, how to bring the existing cases to a happy termination.

Local Characters of the Fever.

9. The disease which has occurred in Horwood would have been called some years since "Common Continued Fever running into Typhus;" it is now designated by the more distinctive name "Typhoid." This is not an occasion to discuss the merits or the nature of the implied difference: it is sufficient for me to state that in well-marked cases "Typhoid Fever" is more fatal than "Typhus." The name unhappily leads non-medical persons to suppose it to be otherwise, and the distinction is specially here mentioned to guard against the error.

On the 29th of June, and again on the 2nd of July, I examined with Mr. Wynter 11 cases. They were fair examples of the early stages of the disease, of its middle, and of approaching convalescence. None were of a severe type; and all may, if no graver complications occur, recover. The ages of the sufferers ranged from 3 to 64. Three were above the age of 40; four were below 20. Five were males, employed in labour.

I am informed by Mr. Wynter and by Mr. Newham, to both of whom I am indebted for the most unreserved communications, that in those cases which have proved fatal they have either been rapidly so, or, which has been more frequent, the disease has come on insidiously, and in the later stages only given evidence of the probable

fatal termination. This termination has, as is very usual in this form of Fever, been preceded by hæmorrhage more or less severe. Death has taken place in the second or the third week, or at a much later period. Partial convalescence sometimes lingers on for many weeks.

With respect to the fatal cases recorded by Mr. Wynter, it is notable that the mortality has been rather less among the parish patients than among those who were in somewhat better circumstances. Many of the lighter cases, indeed, have, under his proper management, stopped in the first week.

In the spring of this year the disease, which began at Michaelmas last year, appeared to abate, to be renewed in May and June.

Presuming that Medical details will here be out of place, I proceed to state what I could learn as specially notable concerning the mode of origin and spread of the disease.

Course of the Disease.

10. As far as can be traced now, either with the assistance of Mr. Wynter or of Mr. Newham, it would appear that the first case appearing about Michaelmas in last year occurred in one of the best houses in the place. Popular opinion traces its origin to Buckingham. The person in question had been there, but without known intercourse with any Fever patient: I understand that there was much Fever in Buckingham at that time.

11. The second case was in the family of a servant who lived in the house where the first case originated. It was not in the person of that servant: the servant had but little to do with the first case; and her sister who was taken ill had not, I am told, been away from

home. The servant eventually returned to her own home, and did not fall ill for a fortnight : all the children, five in number, had the fever, including, last of all, the servant in question : the parents both escaped. The rooms were generally close and too small, but there is no specially marked unhealthy condition in the cottage.

12. It is quite otherwise with the house where the next set of cases occurred. That house was one of the worst in the parish ; it was an underlet tenement, and in some respects in a shocking condition. Some of the family slept in an upper room, large enough, indeed, but dirty. The floor is old and bad ; the ceiling below is not plastered : the area beneath this floor was nearly a foot deep in black, stagnant water, into which from without filth oozed. All who slept in the room over this swamp were taken ill, and three of the family died^c.

13. There was a family connexion between these cases and the neighbours of the next fatal set, which occurred in quite another part of the parish, and a wholly different kind of tenement. In two adjoining rooms of *a Row of new houses* at Nash-End three men died. Other cases have occurred in the same buildings. They will be again mentioned.

14. Shortly after another group of cases sprung up independently of neighbourhood, in another kind of houses,—*old cottages*, not in bad repair, at Singleborough-End. Three are now ill there ; one has died.

15. Though I do not venture to ask you to draw

^c I desire to record that, when these circumstances were made known to the Warden and Fellows of New College, they immediately took steps to take the property into their own hands, and intend, as I understand, the destruction of the present, and the erection of a new and superior tenement.

absolute conclusions from so slender data, yet it will seem to you most probable that some common cause existed in all these tenements, situated widely apart, to produce the first cases of each, and that either the same cause operating on the other inmates, or else contact with the first case, produced the subsequent illnesses. You will have noticed that autumn, winter, spring, and summer have not seen the entire cessation of the disease.

16. The causes of disease that are common to all these houses after the first, are offensive exhalations of some kind adjoining the houses, coupled with deficient ventilation in all the rooms, and more particularly in the bedrooms: in some of these good health is impossible.

It would be useless that I should extract detailed statements and measurements from my note-book, when you have the originals for examination. There are, doubtless, in Horwood many sanitary errors, but scarce any that may not be found in hundreds of other rural parishes.

In most agricultural districts there are many points connected with the older dwellings, which are either remediable, or irremediably bad. Some have thatch, where they should have slate; half-brick-nogging, when there should be walls of the thickness of a brick and a-half; and porous, absorbent tiles, instead of hard flagstones, or wooden flooring. They have rooms 6 feet high below, or even between the rafters, when they should be 7 feet 6 inches, or 8 feet, as a minimum, below them; the door and the windows are not seldom on one side of the house, whereas there should be a back door and windows at the back for through-draught; they have one casement of the window to open, when they both should be hinged; have a pantry without a window, when it should always have free access to the outer air. Some

have a small ladder to the bedroom, instead of convenient stairs ; have one bedroom window a fourth of the proper size *on the floor* below the wall-plate, or on the floor, dormerwise, instead of two against the ceiling ; and allow in some instances but half of the cubic air space for two adults, which should be allowed to one. Every such fact may be seen at Wigwell, and many of the individual blemishes may be noticed in other parts of this and most agricultural districts, which have not been thoroughly taken in hand by influential landlords.

Nor is this all : the exterior of many of the dwellings is no less unsatisfactory than the interior. In some instances, even if the dwellings were better than they are, the gardens might cause disease. Into one an open privy overflows : into another the refuse of the house is thrown near the door, and forms a pitrescent heap round which the children play ; from it the father, as he returns home weary from a breezy field, inhales foulness which blasts the energy that the hours of night should give.

In Horwood, as elsewhere, these heaps are treasured up to be carried away to the allotments.

17. The evils which are here alluded to, and which might be much enlarged upon, were pointed out long ago of Buckinghamshire houses in the Sanitary Reports of 1842 :—

“Those who are ignorant of the habits and dwellings of our rural populations, would be surprised to find how little the labouring classes interest themselves in improving their cottages. If a drain be out of repair, it is usually left untouched until the owner of the property becomes aware of the defect ; and if the privy becomes full, it is left uncleaned until the increase of the soil renders the accommodation inaccessible. To the state of the

privies in the cottage-gardens is attributable more illness than to any other cause. The construction of these conveniences is usually of the rudest character, being nothing more than a hole dug in the ground. In the course of time the soil rises in these holes to the level of the surface-mould, when a natural drain is formed beneath the cottage-floor, which is usually lower than the surface. In a row of cottages on a dry heath in Buckinghamshire, I was surprised to find Fever prevailing amongst the inmates, who were agricultural labourers possessing unusual advantages. The cottages had been constructed with much attention to the comforts of the inmates, yet by the neglect to empty the privies, the vegetable mould beneath the floors had become thoroughly saturated by the drainage; thus producing frequent and serious indispositions amongst the inmates. At Long Crendon, near Thame, the state of these conveniences is as injurious to the health of the inmates of the adjoining cottages as the heaps of decaying animal and vegetable matter at the cottage-doors. Fever is usually endemic in this parish, and during the past year the mortality has been alarming. Mr. Caporn, Relieving Officer of the Thame Union, has taken some pains to point out to the inmates the cause of this mortality, but has not succeeded in obtaining the attention due to the importance of the subject."

"Of one parish it is said, 'There is also a large drain blocked up, the contents of which are in a state of decomposition. These are probably the causes of the prevailing infectious epidemics, and I think require immediate attention.' I could mention other instances of Fever occurring under similar circumstances, but I know of none in which the consequences have been so serious as in the parishes above mentioned. At Long Crendon the severity of the Epidemic has been particularly alarming during the past winter; few families have escaped its effects; and many have lost more than one member."

Again, in the neighbourhood of Stratford-on-Avon:—

"As almost all the cottages in which there has been Fever are thatched, and the thatch in many of them is in a very rotten and insufficient condition, it is not improbable that slow decomposition in the thatch, from the unusual quantity of rain which has

fallen, may have been going on, and contributed to the production and continuance of Fever. It has been observed by others, I believe, that it is more difficult to get rid of Fever in thatched, than in slated cottages."

18. It should not be supposed that in every house all or any of these circumstances are to be noticed, and that they are therefore to be assumed to be the actual cause of disease.

The following history gives probably an example of the two simplest modes of origin of Fever; the one by poisoning through malarious exhalations from the soil, the other by infection from a person already ill. A young man dug the foundations of a wall at Horwood, on a spot where refuse and ordure had been accumulated: he went home to Winslow, and had Fever. Two brothers and a sister have since fallen ill in the same house: all are recovering.

Compare the following. The cottage which I should designate as the most dirty, worst kept, and, on the whole, as far as I know, most unsatisfactory cottage in Horwood, has not had a single death. One inmate had severe Typhus twelve years ago, and more than one minor attack since. Three slight cases have occurred in the house this spring; all the inmates are always unhealthy; but in this endemic though no one has been very ill, no one has been well in it.

19. In truth, where a combination of circumstances is required to produce the disease, people seem sometimes to escape because they are worse off than their neighbours: just as in the thickest of the fight a man escapes, while one only chance shot kills his comrade. A parish house, near the village, which seems positively dangerous, is two feet below the road, and has the floor three inches below the door-sill, is yet airy, because it is large and

out of repair: the bed-room looks miserable, and has no ceiling at the collar; but if it were tiled, from the reasons given, would be healthy enough. I have seen in Oxfordshire and Bucks many such houses, and have heard the people say "they prefer them to (what they call) the better sort: to be sure they look slovenly, but you see, Sir, we have room to move and fresh air."

20. Again, a positive good is neutralized by one carelessness. It has been already said that some of the cottages have no back door: it is almost impossible that a labourer's dwelling should be healthy when this is the case. This fact alone condemns the construction of the new buildings at Nash-End, and renders them dangerous. But on the other hand, a back door may lead to concealed and confined filth, unless there be adequate space behind. Lately, I asked during a sanitary enquiry in a house to which there was a back door, where the privy was placed; the answer was, "Mine ain't a privy, it's a tub!" The tub was among other articles of domestic use at the back door. The object was to collect the manure for the garden.

Or compare these two instances: in one charmingly kept cottage, with a capital garden, the whole of one side of the garden is occupied by a privy, its overflow, a general swamp nine inches deep, for the pig to play in, and his sty; and in the tenement next to it, there is a similar arrangement: there has been scarcely any illness in this house. The pig's swamp is open, (i.e. has no roof,) and the bedroom window is *not* over it. But in another cottage, where the bedrooms are larger, the window is over the roof of a reeking pig muck, and the strong man that slept by the window fell ill and died, and his widow is yet struggling between life and following him.

21. There is no reason for supposing that the aliment

is inferior, or the general condition of the labourers at all worse in Horwood, than in agricultural districts generally. On the contrary. The allotments which were apportioned to them when the common was enclosed have greatly helped them in providing the house. But I fear also that the muck has been treasured up, and more pigs kept close to the cottages, for the purpose chiefly, if not wholly, of supplying manure. The water is obtained chiefly from wells, and is not complained of. That obtained from the rivulets is not fit for drinking, and is not used for it. The south-eastern rivulet, as it flows at the back of Wigwell, is often impregnated with ooziugs from cesspools, and from surface refuse.

Summary of Evils.

22. It remains only now to sum up into a few words the conditions which appear to have favoured the continuance of the disease during the last nine months. Reverting to the modes of origin of Fever as stated above, (§ 7,) viz., Destitution, Bodily and mental depression, Contagion, Over-crowded dwellings, Putrescent animal and vegetable matter, and an Insufficient supply of fresh air, or, as it is called, bad ventilation, we must attribute in various degrees the persistence of the affection to the last four, and especially to bad ventilation. The evil is most grievous in the sleeping rooms. "We can do no more," said one admirable woman, "than keep clean that which we have. We cannot get our landlord to give us more air, or make the windows we have to open. 'Women,' he said, 'are best shut up.'" Some of the small cottages at Wigwell are models of personal cleanliness and of neatness on the part of the inmates. The fault is not in them, but in their tenements. So offensive do the bed-rooms of some become

in the rooms where the windows are near the floor, that one said to me, "I often awake in the night stifled, and me and my husband go and sit at the window."

Too much stress cannot be laid on this. It is an evil the inmates cannot, with their present education and notions, rectify. It would seem very easy, by borrowing a tool or two, to make, at the cost of a little labour and wit, an additional window in a roof; but "it is the landlord's place" to do it. He does not know of the necessity, or *has not the means*, or doubts the soundness of what he considers sanitary innovations. And as for the father, he comes home tired. From day to day the old small casements remain; no better are substituted, and none are added.

To this I must only append the oft-repeated caution against accumulations of muck, filth, and piggeries close to human dwellings. The great difficulty of the case must be admitted. Custom, convenience, poverty, want of time, family cares, and close living, combine against the formation of the energetic moral habit which leads to the most healthful state of body and mind. With many, therefore, the difficulties of living are barely surmounted; complete mastery of their circumstances is seldom attained.

Remedies proposed.

23. From the statement of the causes which has been made, the remedies become self-evident.

In all cases of Endemic disease, there are two main objects:—1st, to treat the sick, and, 2ndly, to check the formation of new cases of illness.

1. Under the first head, the treatment of the sick, you have no great difficulty. With an attentive and zealous medical officer, who has not spared himself, the poor have

the advice they stand in need of. But for placing them favourably for following our advice, two things are necessary ; 1st, a Superintending nurse or nurses, as the numbers may require ; 2ndly, either the removal of the sick person to an airy apartment, or of the rest of the family to another house.

You have no difficulty about a nurse, as an old Crimean nurse is already gone to you, and more can be supplied from hence, or from elsewhere, should you need them : and for the second recommendation, a barn might be borrowed ; at this time of the year it would furnish all the comfort you need. At all events, it is certain that as many of the roof attics at Nash-End, Singleborough-End, and Wigwell now are, a due supply of air, without an alteration in the windows, is impossible.

The ministrations of the esteemed Rector, to whose devotedness the parish is largely indebted, will supply his flock with confidence and cheerfulness ; these will conduce to that vigorous state which is calculated as well to resist the infection as to battle with the disease.

2. With respect to the secondary measures, those for checking the disease, they also have been implied, and may be briefly summed up.

The removal of sewage from an agricultural village is attended with particular financial difficulty. Your legal adviser will, however, best explain the methods and the powers by which funds may be raised under the existing Health Acts. Horwood has remarkable facilities for systematic drainage. These I have pointed out above (§ 5). The cost, therefore, would be less, and the result much better than in many villages.

If this is not to be done, the next step is to take measures for a methodical removal of the "soil," and for

a cleanly manner of keeping it till it shall be removed. The Chinese are great adepts at ensuring the removal of human ordure; and it was carried to some perfection in France^d. I have no doubt that by energy and attention on the part of an inspector, or with a small subscription, measures might be taken to ensure the regular cartage of all refuse that can be useful in agriculture to the allotments or grounds where it is needed, with advantage to the cultivator as well as the inmates. In truth, as is well known, in some places these heaps are purchased. Any way, the object to be aimed at is a system of complete removal at short intervals.

When the exterior of the labourers' dwellings has been so provided for, the next desideratum is a dwelling which will be healthy, if kept with care. A neat cottage has been built near Wigwell, and is beautifully kept. But it is nearly on the model of the old traditional kind; being so, clearly, from want of knowledge, and not of intention. There is no back door: the rooms are somewhat higher, but the bedroom windows are far too small, ill placed, and insufficient, and the ceiling under the collar should be pierced with a ventilating trap-door.

A model Cottage is required.

It is of the utmost consequence, in a sanitary point of view, that in every district there should exist a good cottage built at *the cheapest rate*, to serve as a model to small capitalists and tradesmen who are willing to invest in this kind of property, and as a pattern to the labourers of the kind of cottage they ought to have. I take leave, therefore, to add, in a few propositions, the essentials for a healthy cottage. The grounds of the

^d See Appendix to Memoir on the Cholera at Oxford. (London and Oxford: Parker. 1856.)

several recommendations are generally very obvious, and I should fear to trespass on your patience if I were to do more than enumerate them.

1. Detached or double cottages are preferable to rows. Double cottages are perhaps the best of the three.

2. The angles, not the sides of the building, should be placed to the cardinal points of the compass. They should stand *in* their garden-plot; that is, a little way back from their front boundary.

3. The garden should, if practicable, contain from a sixth to a quarter of an acre. The privy should be at the extreme end, with the pigstye, if there be one. But as it is very doubtful whether a pig is a real advantage to a small family living on small means, and as it is certain that a pigstye is in itself an evil, pigs are to be tolerated, not to be encouraged.

4. A drain from the back door to the privy should carry surface drainage and house slops to the privy; and thence, wherever practicable, another drain should lead to a tank for distribution by the farmers to meadow or other land. The cesspool should be a closed one, if a cesspool is necessarily employed, and agreements should be made for periodically removing its contents.

5. Tiles or slates, not thatch, are to be used.

6. A back as well as a front door: windows on both sides of the tenement, if in a Row: or on three sides, if in a double cottage. A window in the pantry. Both sashes to open, where sashes are used; both casements, where there are double casements.

7. The day-room to have in its chimney an Arnott's valve or the better arrangement of an air-tube or separate flue. The floor to be made with a boarded centre, and hard flags or tile border, set in concrete. The floors to

be raised six inches at least above the outer road. The back room to have a fireplace, with boiler attached, and a well-trapped sink.

8. Three bedrooms : for parents, boys, and girls. Height of rooms to be eight feet : the top of the windows to reach the ceiling. A fireplace to be in one room at least, a ventilating tube in the other two.

9. The front room and bedrooms to be approached from a porch : the staircase may be open to the room, or closed.

10. Where rows of houses exist, a washhouse in common to all the houses should be contrived in the garden. It may be next a row of wood-houses and tool-houses, and have a common pump adjoining. Its drain to go to the privy^e.

11. The privy in every case to be removed as far as possible from the water supply.

* It would be needless to go into further detail : ample information may be obtained, as well as specifications of small dwellings, from the Sanitary Report, 1842 ; from the admirable volume, "The Dwellings of the Labouring Classes," by Roberts ; and from the Journals of the Royal Agricultural Society, and also of the Bath and West of England Agricultural Society, for the year 1856 (Ridgway, London) ; in these valuable periodicals, copious details are given in a prize essay by Mr. Isaacs of Bath.

There is reason to believe, as I have said, that New College will shortly erect some excellent cottages in Great Horwood ; some model cottages have been long desired in Oxford ; see my "Memoir on Cholera in Oxford." On almost every gentleman's estate there are examples ; on Sir H. Verney's, or, further off, at Windsor, on the Bedford estates, the Pusey estate, Sir Robert Throckmorton's, Lord Radnor's, &c. ; but I do not insist on these, because my object is to aid small capitalists and small builders in the way of making the cottages which they build as free from fault as possible, and at the same time of making them serve as investments as well (if this word may be used) as they do now.

Summary of Remedies.

24. In conclusion, the following recapitulation and summary is added of remedies suited to your present emergency.

I. IMMEDIATE MEASURES.

a. Treatment of Sick.

1. Removal of early cases to more airy apartments: a barn may easily be made more comfortable than some of the rooms; and more healthy to the wife or attendants.

2. When the removal of sick cannot be effected, removal of the other inmates, except those required for nursing.

3. Immediate washing of linen, by a paid washer-woman, the clothes being boiled in a copper.

4. A competent superintendent nurse to go round to the cases daily to see that the advice of the Medical Officer is carried out, and to report to him where, why, and in what there is difficulty in obeying him.

b. Management of Dwellings, and Inspection of Nuisances.

1. To recommend to every house where the disease has existed systematic cleaning and lime-washing. When the inhabitants have not the means, to do this for them without charge; urging upon them the burning of accumulated rags and useless stores, which will in some houses be found.

2. To remedy, as far as possible, every privy in a dirty condition, by burying its soil with lime; and when it adjoins the houses, to remove it to a greater distance: to clear and trap existing drains, especially at the cottage doors.

3. To examine the ground near the bedroom windows, and to remove any putrescent matter.

4. To open small dormers near the ceiling of such

bedrooms as are in the roof, in close and small cottages; and to open trap-doors in the bedroom ceilings which are applied at the level of the collar in the same cottages.

II. PROSPECTIVE OR PREVENTIVE MEASURES.

a. *Drainage.*

To consider seriously, the feasibility of a systematic drainage of the parish in connection with the two natural streams, and the formation of sewage-tanks on those streams for the adjoining lands, such tanks to be placed at a distance from houses: to drain thereby or fill up stagnant ponds and ditches near houses.

b. *Houses.*

1. To improve permanently the ventilation of the existing rooms, by opening and enlarging casements, adding Arnott's valves, or ventilating tubes; to remove pigstyes and privies as far as possible, especially from the bedrooms; to emend the privy arrangements, where possible, on Isaacs' method. (See "Royal Agricultural Journal," 1856.)

2. To promote the erection of cottages of greater height, and constructed on the principles above described (§ 23).

It is not consistent with observed facts here or elsewhere to conclude that Fever necessarily accompanies foul drains, or even over-crowded, unclean, and unventilated dwellings; but for the practical purpose of caution, and for the inculcation of a just dread of these conditions, it is equally cogent if we are obliged to believe that Fever may originate at any time in such circumstances; that they are exceedingly favourable to its development; that where Fever has once entered, its ra-

vages may continue for many months; and, which is most alarming, that, when it has entered a district, the danger is no longer confined to the unclean and the careless. In the great Epidemics of Scotland and Ireland this has been abundantly and repeatedly proved.

It is my duty further to remind you that there is no doubt that the disease may be carried, and is habitually carried, from place to place by persons moving to and fro; by residents; by vagrants; and that when so imported, it establishes a fresh centre of disease. This has actually happened, as I have before stated, at Winslow. That centre, then, begins afresh. If it happen to light on a dwelling not favourable for further development, it is well. If it light on a house where all is ready for the formation of the poison, the whole family may be consumed, and a newer and more potent ferment is established for that neighbourhood.

They who know and believe these things are separated by a wide gulf from those who do not know or who do not believe them. They who do not know or believe, or who, knowing and believing, persuade themselves that themselves will be exempt, turn aside from the Physician who strives to PREVENT, as from a Visionary, and so wait the time when the only thing left is to cure what might have never occurred, and is then perhaps incurable.

I have the honour to be, Sir,

Your obedient Servant,

HENRY W. ACLAND.

TO PHILIP DAUNCEY, ESQ., J.P.,

Chairman of the Winslow Board of Guardians.

Also, by the same, lately published,

MEMOIR ON THE CHOLERA AT OXFORD,

With Considerations suggested by the Epidemic.

With Maps and Tables.

Quarto, price 12s.

NOTES ON DRAINAGE,

With especial reference to the

SEWERS AND SWAMPS OF THE UPPER THAMES.

Price 6d.

HEALTH, WORK, AND PLAY;

SUGGESTIONS FOR EACH.

Price 1s.

NOTE ON TEACHING PHYSIOLOGY

IN THE HIGHER SCHOOLS.

Price 3d.
